

## **ABSTRACT OF THE DISCLOSURE**

A system and method for classifying and measuring human motion senses the motion of the human and the metabolism of the human. A motion classification unit determines the motion type being carried out by the human and provides the motion classification information to an energy estimator and a health monitor. The energy estimator also receives the metabolism information and therefrom provides an estimate of energy expended by the human. The health monitor triggers an alarm if health related thresholds are traversed. The motion classification is also provided to a processing unit that in turn provides the data to a Kalman filter, which has an output that is provided as feedback to the motion classification unit, the energy estimator and health monitor. Altimeter, GPS and magnetic sensors may also be provided for monitoring the human motion, and initial input and landmark input data inputs are provided to the system.

CHI\_DOCS2\683471.1